



PATELLAR (KNEE CAP) INSTABILITY NON-OPERATIVE REHABILITATION GUIDELINES

General notes:

The care and management related to atraumatic and traumatic patella instability injuries are outlined below. For those who are suffering from knee pain without a patella subluxation or dislocation please refer to the patella femoral non-operative guideline.

Patella instability is common and can be caused by any or all of the following:

- Uneven or shallow femoral groove
- Direct blow or hit to the patella
- Falling directly onto the patella
- Twisting on a planted foot during activity

When these issues are present, the patella (kneecap) which lies within a groove known as the trochlea tends to have excess mobility, hence the name patella instability. Care is directed at improving the stability and involves treatment around the hip, knee, and ankle.

All phases and exercises are to serve as guidelines. Progression through these guidelines should be based upon criteria and will vary depending on each individual patient. Exercise suggestions are merely suggestions, and are not appropriate for every patient.

Return to sport is based on input from team of providers (physician, physician assistant, athletic trainer and/or physical therapist) & appropriate testing.

The following factors should provoke communication with or referral back to the treating physician:

- **Visible swelling longer than 2 weeks or new swelling lasting more than 48-72 hours**
- **Further loss of range of motion (ROM)**
- **Increased pain**
- **Patellar subluxation and/or dislocation**
- **Inability to progress if pain exists**

Phase I: Initial Phase

Brace:

- Hinged knee brace locked in extension at all times.
- Weight bearing as tolerated with crutches

Taping / Orthotics:

- McConnell / Kinesiotaping – as needed or indicated by provider for symptom management
- Orthotics when appropriate to address foot and/or ankle abnormalities

ROM (Range of motion):

- Progress with physical therapist & with a home exercise program (HEP) until functional ROM is achieved

Therapeutic Exercises:

- Emphasis on neuromuscular re-education to improve faulty or dysfunctional movement patterns
 - Core strengthening
 - Supine transverse abdominis, planks
 - Open chain hip strengthening as tolerated
 - Sidelying hip alphabets, sidelying hip abduction, clamshells,
 - Closed chain hip & knee strengthening as tolerated
 - Proprioceptive training, Lateral band walks, bridges
 - Stretching of shortened muscle groups (hip flexors, quadriceps, hamstrings, gastrocnemius / soleus complex)

Manual therapy:

- Appropriate joint & soft tissue mobilizations as needed to hip / knee / ankle to address restrictions and create smooth and symmetric motion



PATELLAR (KNEE CAP) INSTABILITY NON-OPERATIVE REHABILITATION GUIDELINES

Cardio:

- Swimming & stationary bike as tolerated

Modalities:

- Cryotherapy (ice pack or ice massage) as needed

Progression to Phase II:

- *Reduction or improvement in pain levels with daily activities*
- *Reduction in swelling*
- *Improving functional ROM of knee and hip*

Phase II: Intermediate Phase**Brace:**

- Unlock hinged knee brace initially to 0-60 degrees as indicated by provider
- Wean off of crutches if able to ambulate with non-analgesic gait

Taping / Orthotics:

- Continue with McConnell / Kinesiotaping if helping to reduce symptoms
- Continue with orthotic use if helping to reduce symptoms

ROM:

- Progress to full ROM

Therapeutic Exercises:

- Progress core exercises with emphasis on hip strength (hip external rotation, hip abduction and hip extension)
 - Prone & sidelying planks in conjunction with lower extremity movements
- Progress both open & closed chain hip and knee strengthening exercises both concentrically & eccentrically
 - Squats, box step ups, wall sits, medial step downs
- Continue to stretch / lengthen shortened muscle groups
- Initiate single leg balance exercises with emphasis on neuromuscular control
 - Anterior / Lateral / Posterior reaching, steamboats, 3 way cone reach

Manual Therapy:

- Continue with appropriate joint & soft tissue mobilizations as needed to hip / knee / ankle to address restrictions and create smooth and symmetric motion and reduce swelling

Cardio:

- Continue with swimming & stationary bike
- Initiate elliptical if tolerated
- Initiate light straight-plane jogging if tolerated

Modalities

- Cryotherapy (ice pack or ice massage) as needed

Progression to Phase III:

- *Good neuromuscular control with all closed chain hip & knee exercises*
- *Good tolerance to initiation of jogging in Phase II*



PATELLAR (KNEE CAP) INSTABILITY NON-OPERATIVE REHABILITATION GUIDELINES

Phase III: Advanced Phase

Brace

- Discontinue use of hinged knee brace and transition into patellar stabilization brace

Taping / Orthotics :

- Begin to wean self from all taping, using only as needed
- Continue with orthotic use if helping to reduce symptoms

Therapeutic Exercises:

- Patient to continue all core / hip / knee strengthening exercises with HEP (home exercise program)
- Continue all stretching
- Continue to progress dynamic balance / proprioception exercises
 - Challenge patient with perturbations and standing on various surfaces ie. Foam, BOSU

Cardio:

- Progress from jogging to running and sprinting when tolerated

Plyometrics:

- Simple double-leg plyometric exercises with a focus on maintaining good form & mechanics
 - Ladder Drills, drop vertical jump, line hops
- Progress double leg → single leg when tolerated
 - Split lunge jumps, lateral bosu push offs, double leg & single leg broad jumps, lateral bounding

Modalities

- Cryotherapy (ice pack or ice massage) as needed

Progression to Phase IV:

- *Symmetric strength of hip and knee bilaterally*
- *Symmetric neuromuscular control with all plyometrics initiated in Phase III*
- *Demonstration of understanding of HEP*

Phase IV: Return to Sport Phase

Taping / Orthotics:

- Used only for comfort
- Continue with orthotic use if helping to reduce symptoms

Therapeutic Exercises:

- All core, hip and knee exercises should be continued with an HEP

Cardio:

- Running
- Sprinting
- Sport – specific conditioning

Plyometrics:

- Sport-specific activities
 - Change of direction, cutting, pivoting (with a soccer ball, for example)

Modalities:

- Cryotherapy (ice pack or ice massage) as needed